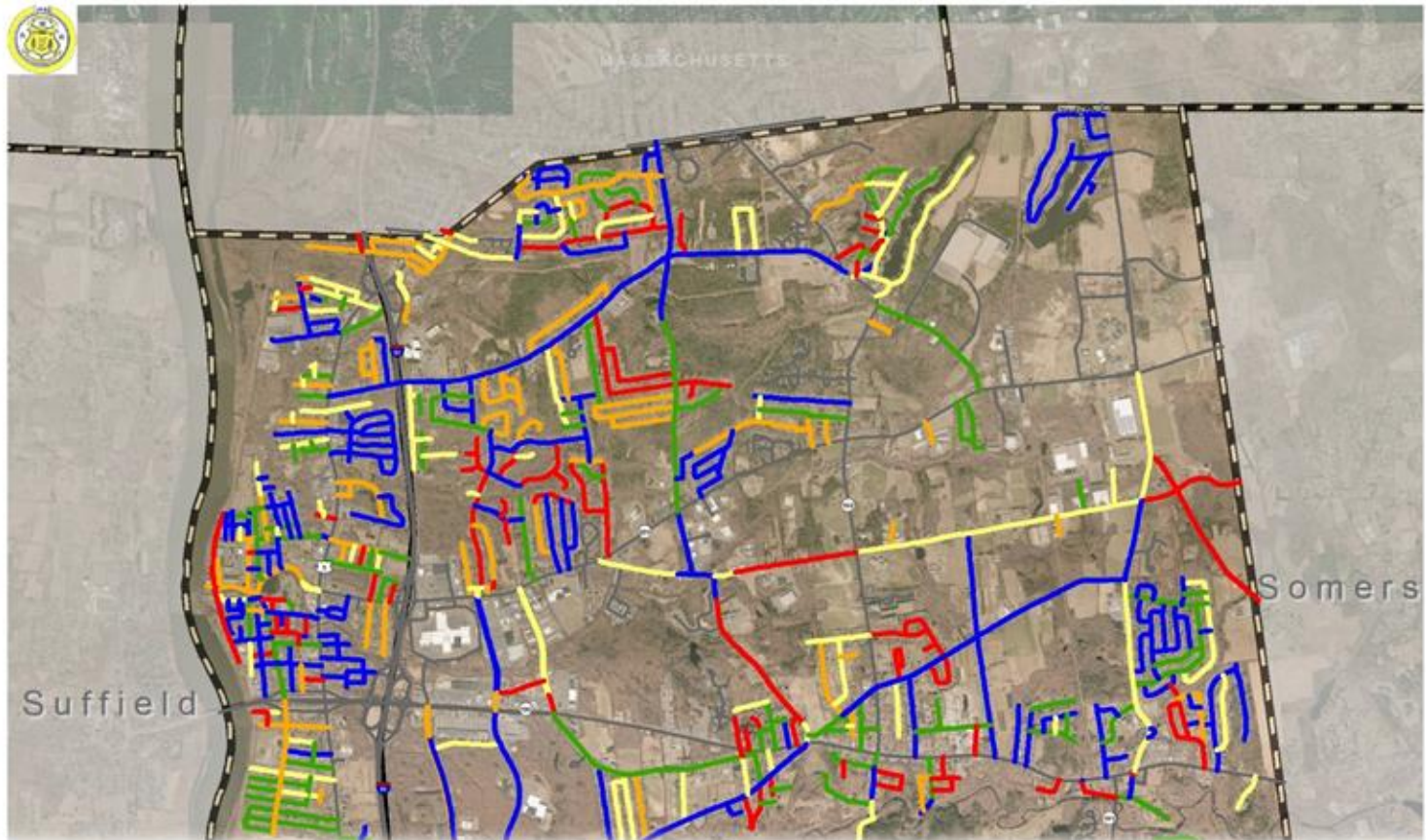


September 3, 2019 | **Town of Enfield**



Pavement Management Study



Presentation Overview

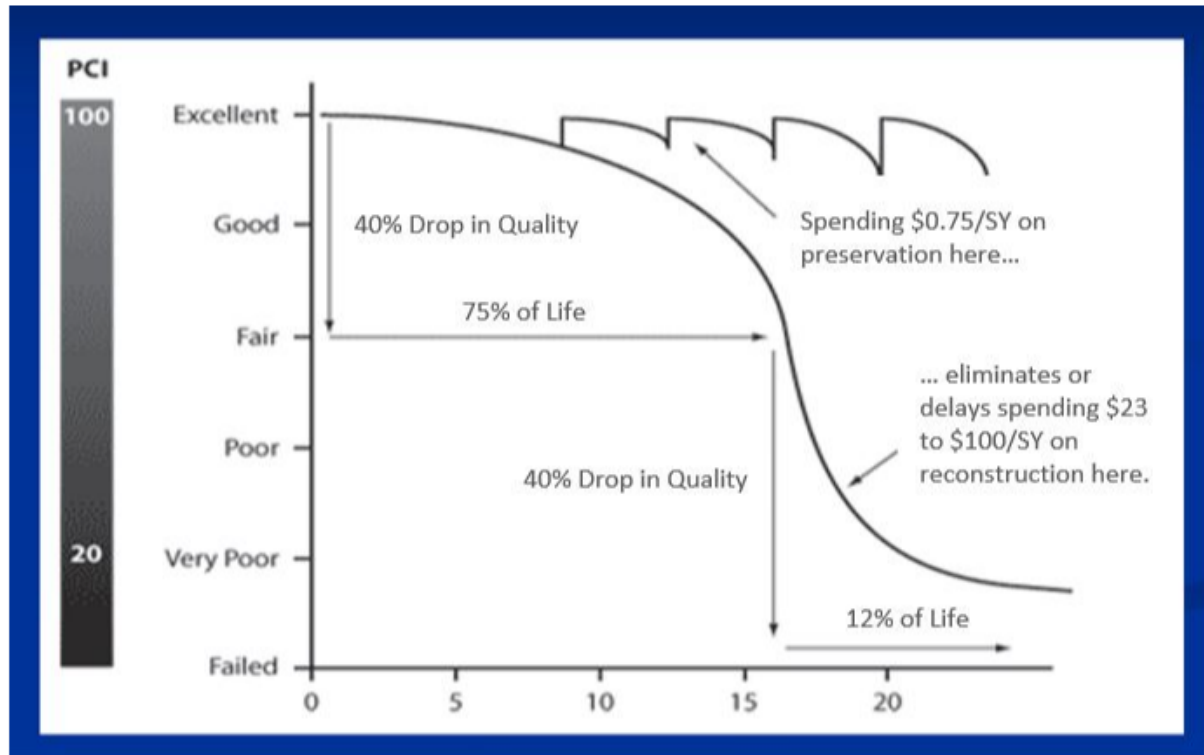
- **Pavement Management Background**
- **Pavement Management in Enfield**
 - The History of ROADS Programs
 - ROADS 2015 Review
 - The Process
 - Current Conditions & Backlog
 - Budget Analysis
 - 2020-2023 Paving Plan

What is Pavement Management?

The practice of planning for pavement maintenance and rehabilitation with the goal of maximizing the value and life of a pavement network.

Otherwise known as:

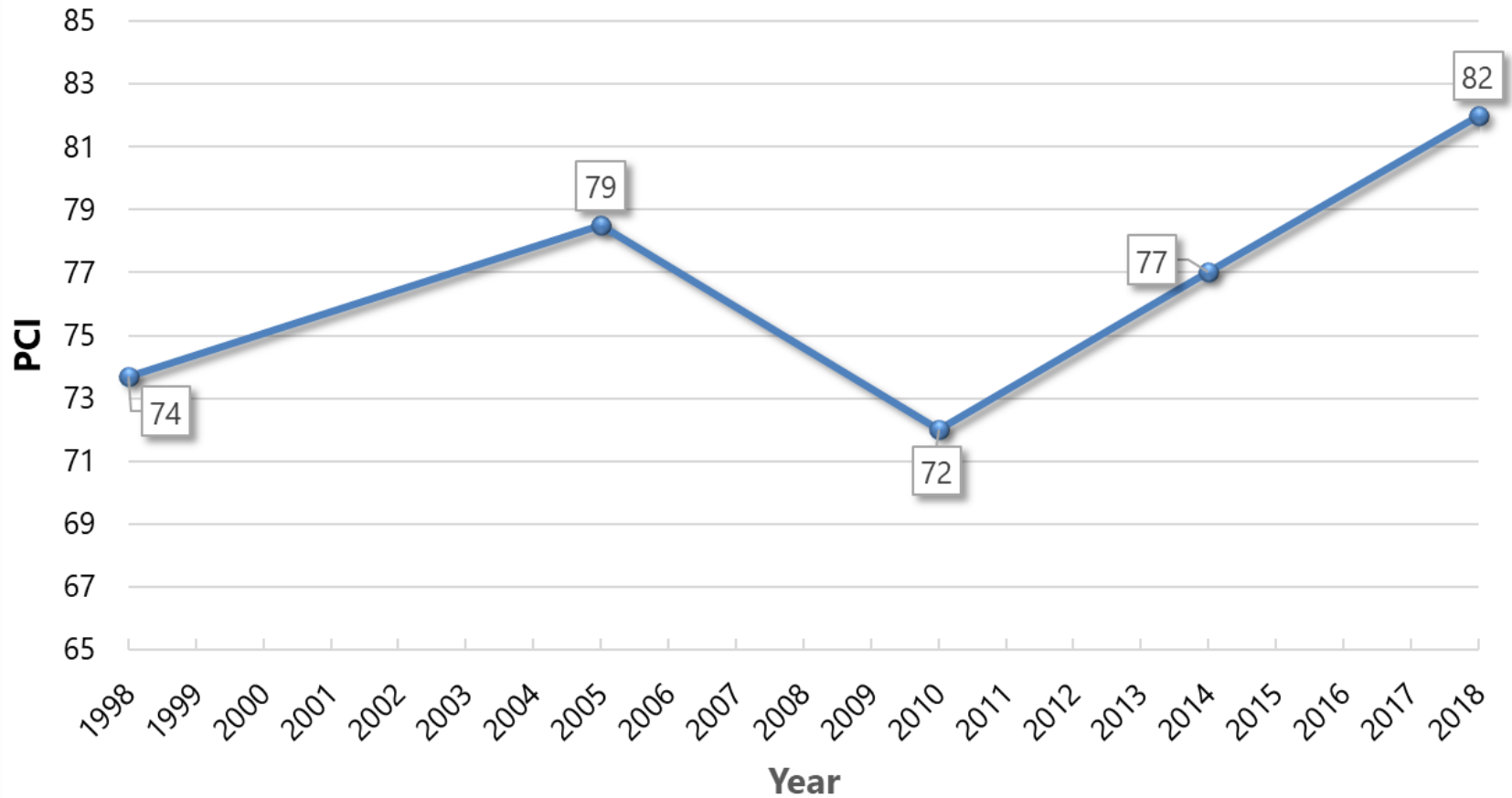
“Getting the Biggest Bang for Your Buck”



Success of the ROADS Program

	Investment in ROADS	Miles Improved	% of Enfield Miles
ROADS 2000	\$21.6M	37.6	21%
ROADS 2005	\$24.0M	14.9	8%
ROADS 2010	\$27.5M	40.8	22%
ROADS 2015	\$60.0M	34.4	19%
Total Program (Current)	\$133.1M	127.7	70%
ROADS 2020	\$26.0M	26.7	15%
Total Program (Including Potential Bond)	\$159.1M	154.4	85%

Historic Pavement Condition Index



ROADS 2015 FINANCIAL REVIEW

SUMMARY

YEAR TO DATE SPENT	\$ 49,039,256.94
YEAR TO DATE ENCUMBERED	\$ <u>9,502,768.68</u>
TOTAL	\$58,542,025.62

OTHER COSTS

EPD POLICE	\$ 1,054,126.60
OUT OF TOWN POLICE	\$ 33,023.00
INTEREST EXPENSE	\$ 111,289.67
CULVERTS (TOWN FARM ROAD & BRIDGE LANE)	\$ 345,516.00
USACOE	\$ <u>88,000.00</u>
TOTAL	\$ 1,631,955.27

FUTURE SAVINGS

REMOVAL OF 446 SIDEWALKS THROUGH DRIVEWAYS	\$ 186,704.00
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ROADS 2015 FINANCIAL REVIEW

IS \$300/LF STILL ACCURATE?

- 27 PROJECTS GEOGRAPHICALLY THROUGHOUT TOWN
- AVERAGE PER FOOT COST – \$289.41
- HIGHEST PER FOOT COST – \$486.56
THOMPSONVILLE NORTHEAST – LAUREL STREET, PLEASANT STREET AND COLLEGE STREET
- LOWEST PER FOOT COST - \$169.04
PAVEMENT PRESERVATION YEAR 5 – TAYLOR ROAD, PALOMBA DRIVE AND ELM STREET

ROADS 2015 FINANCIAL REVIEW

WRAPPING IT UP – WHAT'S LEFT?

ST. JAMES WEST

- COMPLETE BY NOV. 2019 – ST. JAMES AVENUE, GANNY TERRACE AND CARMELA TERRACE
- COMPLETE BY NOV. 2020 – JOAN DRIVE AND MARSHALL ROAD

THOMPSONVILLE SOUTHWEST

- COMPLETE BY NOV. 2019 – SPRING STREET SEWER ON SOUTHERN SECTION
- COMPLETE BY NOV. 2020 – CROSS STREET, MAPLE AVENUE, PEASE STREET, SOUTH STREET AND SPRING STREET

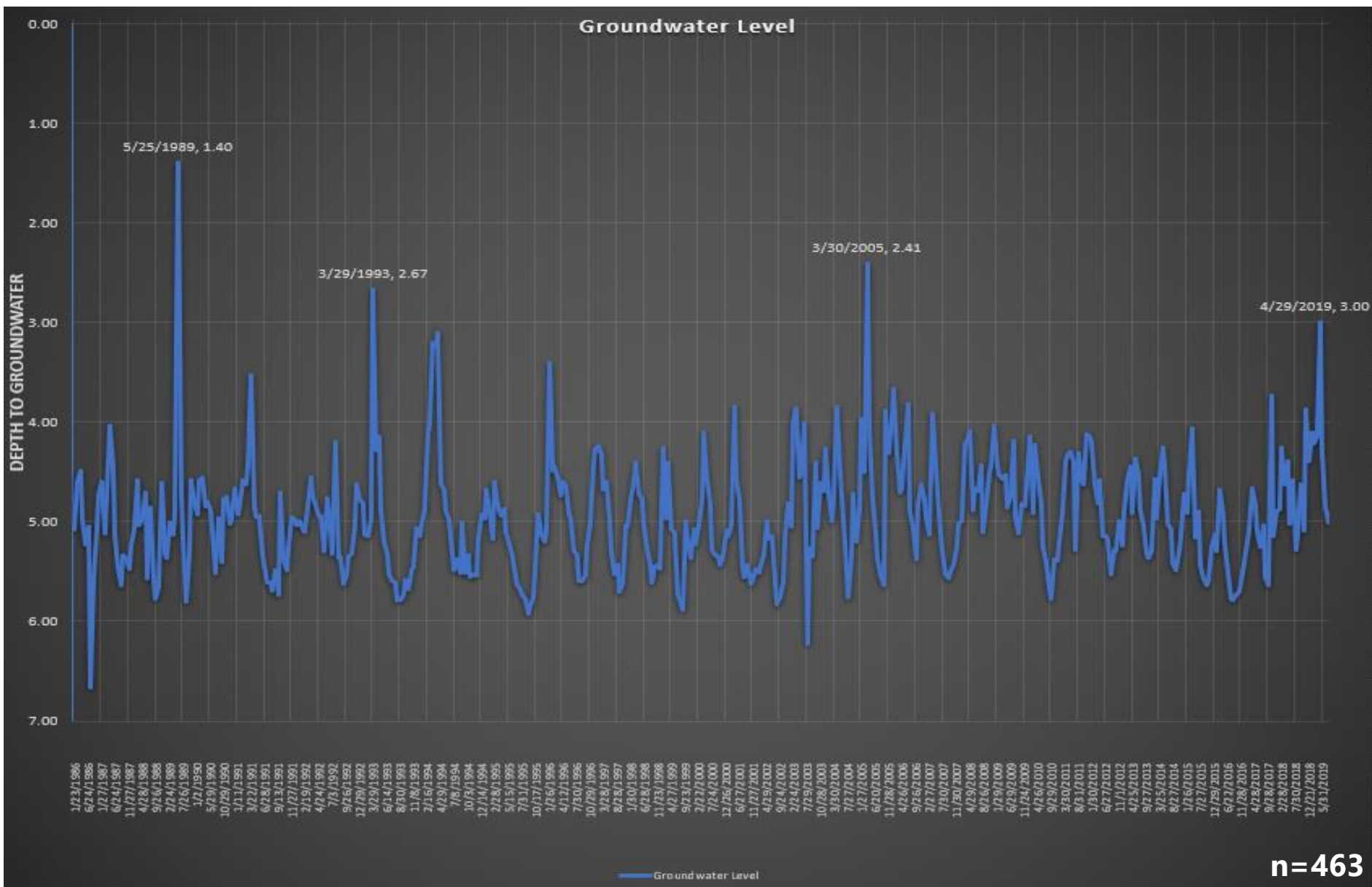
TILL BIRCHWOOD

- COMPLETE BY NOV. 2019 – BIRCHWOOD ROAD AND BIRCHWOOD TERRACE
- COMPLETE BY NOV. 2010 – TILL STREET

*RIVER – WASHINGTON (NORTH RIVER STREET, SOUTH RIVER STREET AND WASHINGTON AVENUE)

- ON HOLD PENDING FINANCIAL STATUS OF ONGOING PROJECTS

GROUNDWATER INFORMATION



The Process

- Pavement Condition Assessment
- Pavement Condition Index (PCI)
- Define Repair Strategies and Costs
- Test Budget Scenarios
- Develop list of candidate projects

Pavement Condition Assessment

- “Boots on the Ground” Data Collection Approach
 - Walking/Driving
 - Detailed pavement distress data
- Equipped with Laptop/Tablet Computers, GIS, & GPS
- 10% Quality Assurance



Pavement Condition Index (PCI)

- A numerical index between 0 (impassable) and 100 (newly paved) that is used to indicate the general condition of a pavement. The PCI measures the type, extent and severity of pavement surface distresses (typically cracks and rutting) and the smoothness and ride comfort of the road.

Treatment Band Descriptions

Treatment Band	PCI	Description
Do Nothing	93-100	Excellent condition – pavement is in need of no immediate maintenance.
Routine Maintenance	86-92	Good condition – pavement may be in need of crack sealing or minor localized repair.
Preventive Maintenance	73-85	Fair condition – pavement surface may be in need of a surface seal or thin overlay.
Structural Improvement	61-72	Pavement surface structure is in need of added strength for existing traffic. The typical repair for these roads is to overlay or mill and overlay.
Base Rehabilitation	0-60*	Deficient condition – typically, the base layers of the pavement need to be rebuilt. The typical repair for these roads is reclamation but full reconstruction may be needed.

* Note that factors other than PCI, such as the existence of distresses that indicate base failure, may trigger a recommendation for base rehabilitation.

Pavement Treatment Bands

Do Nothing Condition (PCI 93-100)

PCI = 100



Laurel Street

Treatment options – Do Nothing

Pavement Treatment Bands

Routine Maintenance Condition (PCI 86-92)

PCI = 88



Alden Avenue

Treatment options – Crack sealing

Pavement Treatment Bands

Preventive Maintenance Condition (PCI 73-85)

PCI = 76



Columbus Avenue

**Treatment options – Preventive
Maintenance or Thin Overlay**

Pavement Treatment Bands

Structural Improvement Condition (PCI 61-72)

PCI = 61



Parker Street

**Treatment options – Mill & Overlay or
Overlay**

Pavement Treatment Bands

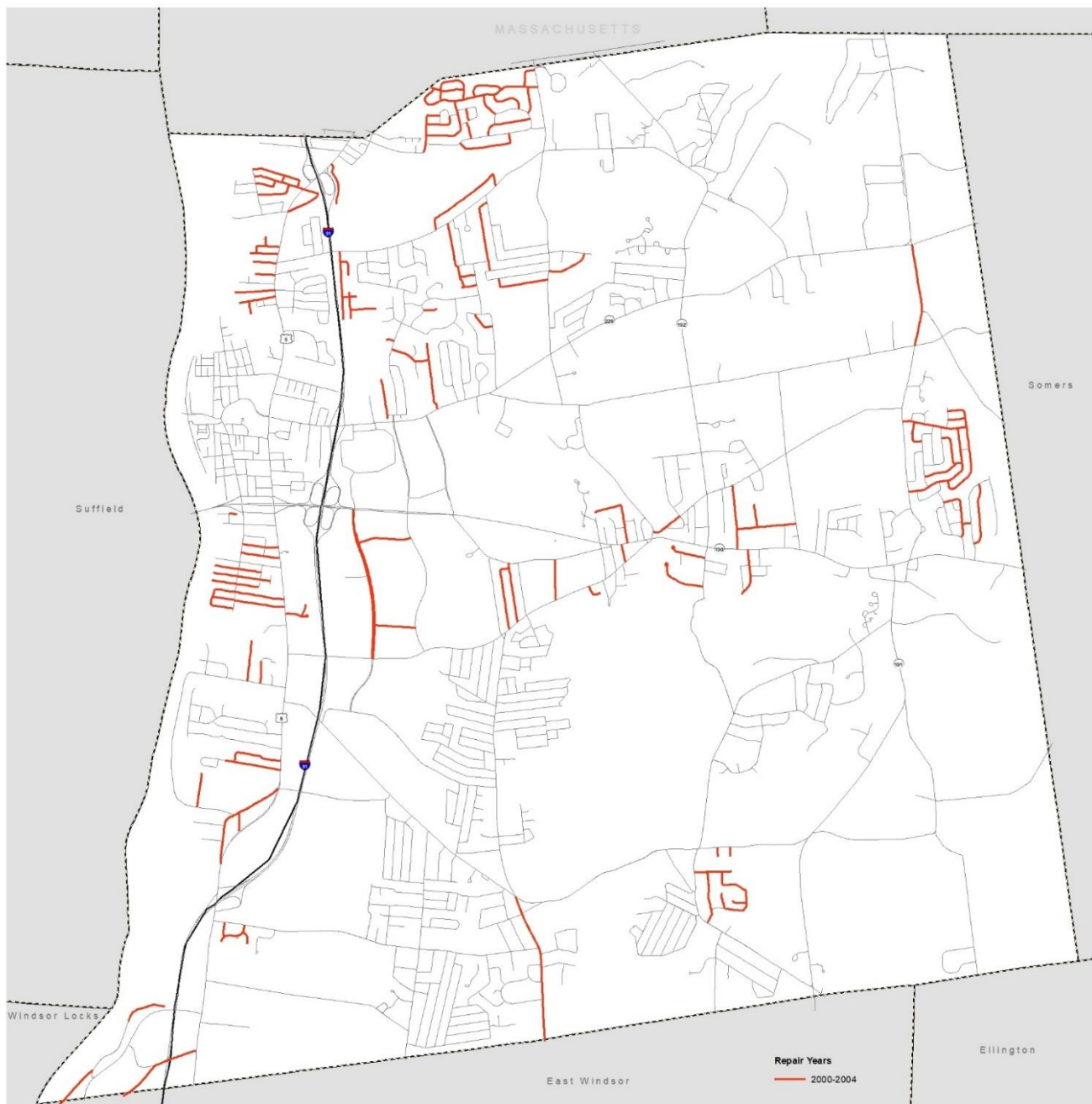
Base Rehabilitation Condition (PCI 0 - 60)

PCI = 57

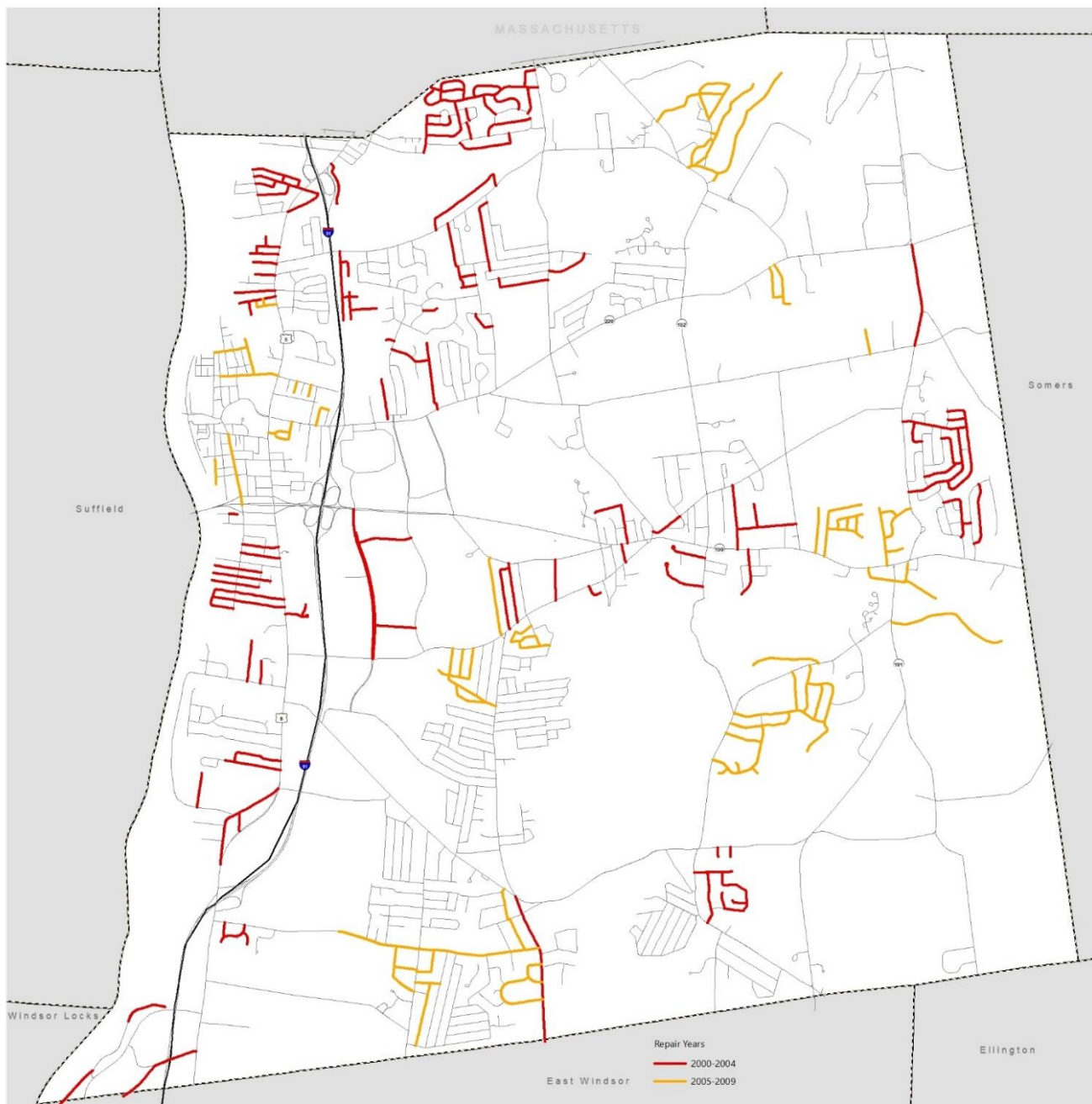


Summer Street

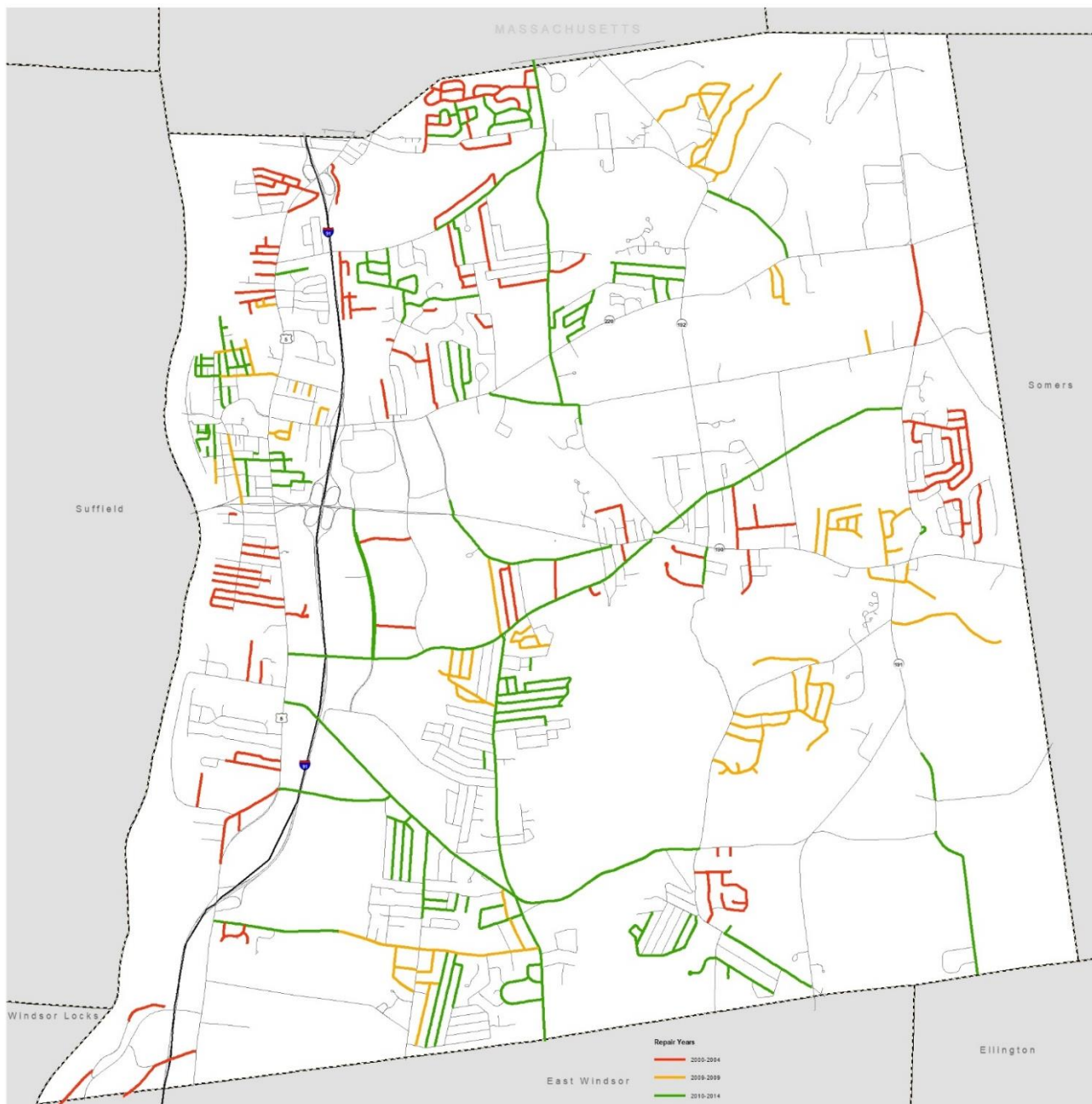
**Treatment options – Reclamation,
Reconstruction or Base Rehabilitation**



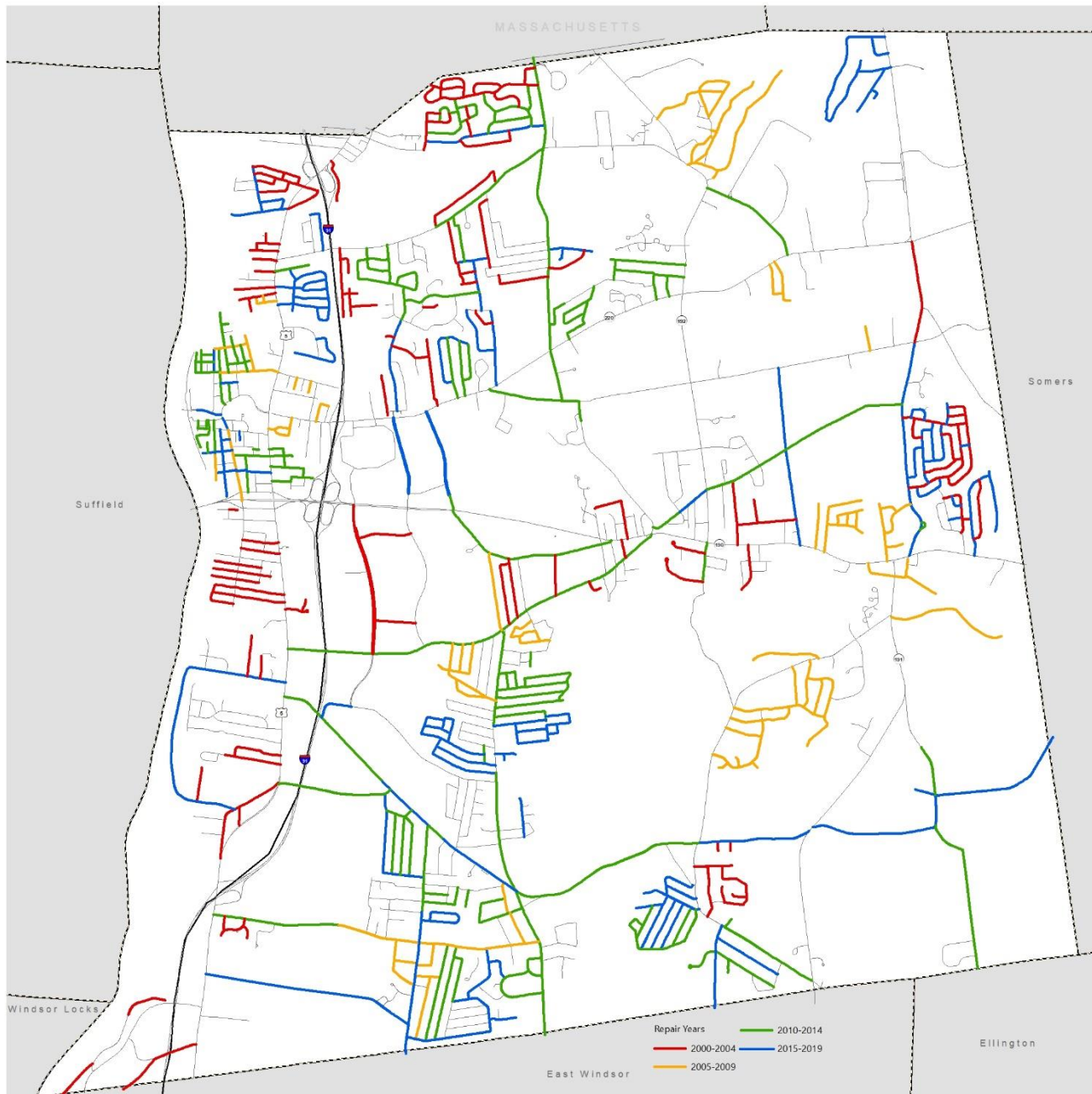
ROADS 2000 (2000-2004)



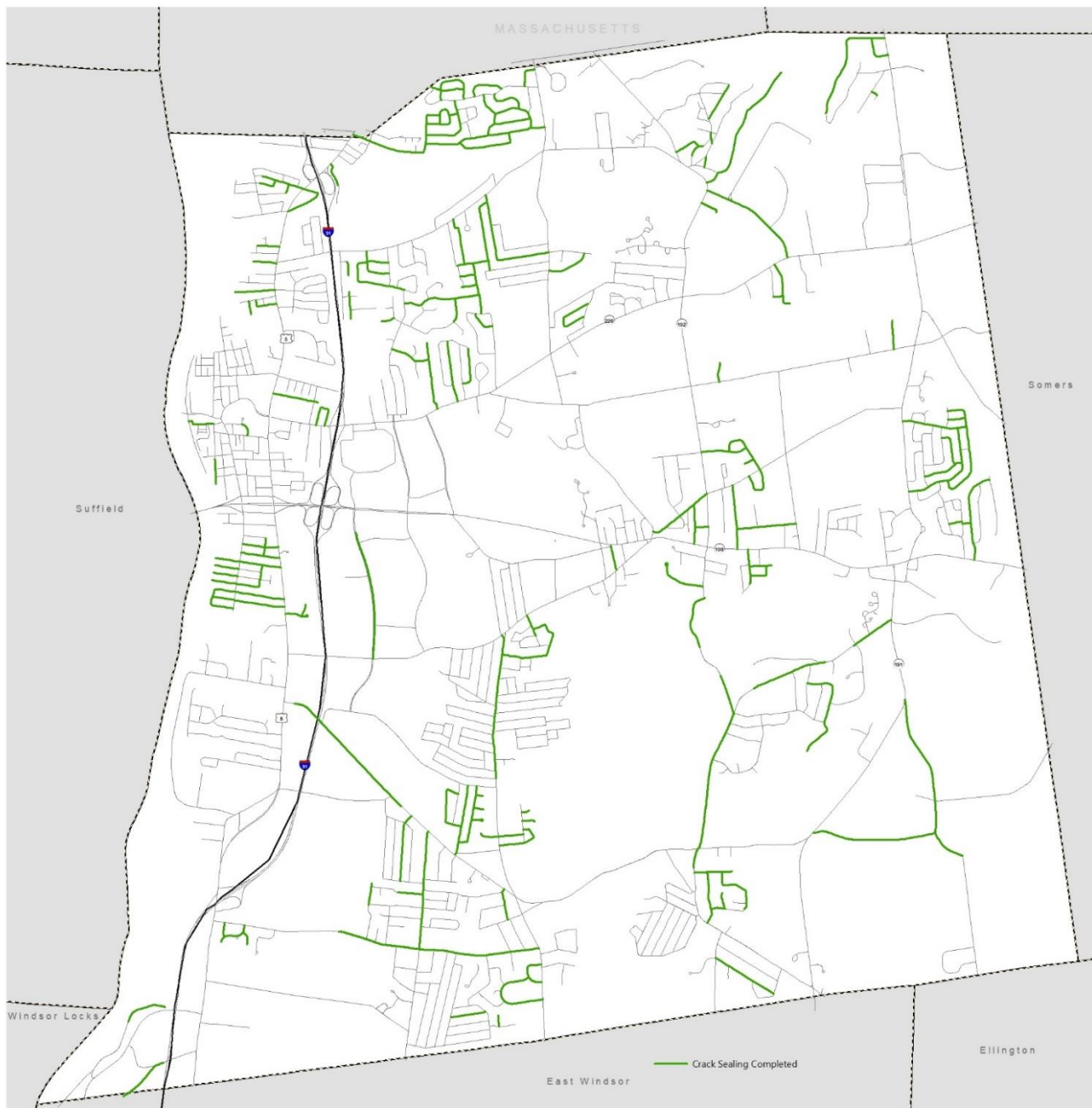
ROADS 2000 & 2005 (2000-2009)



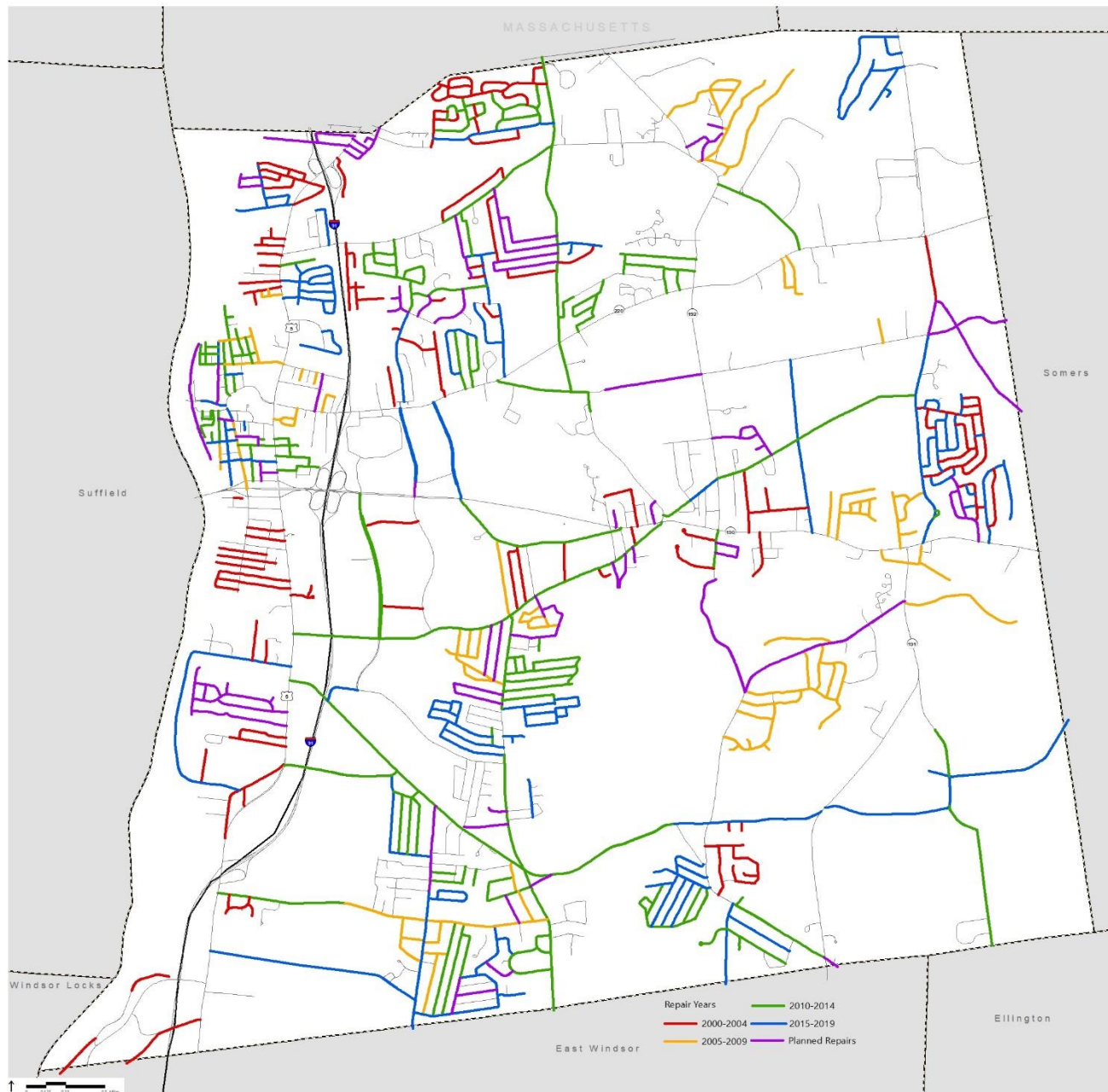
ROADS 2000, 2005, 2010 (2000-2014)



ROADS 2000, 2005, 2010, 2015 (2000–2019)

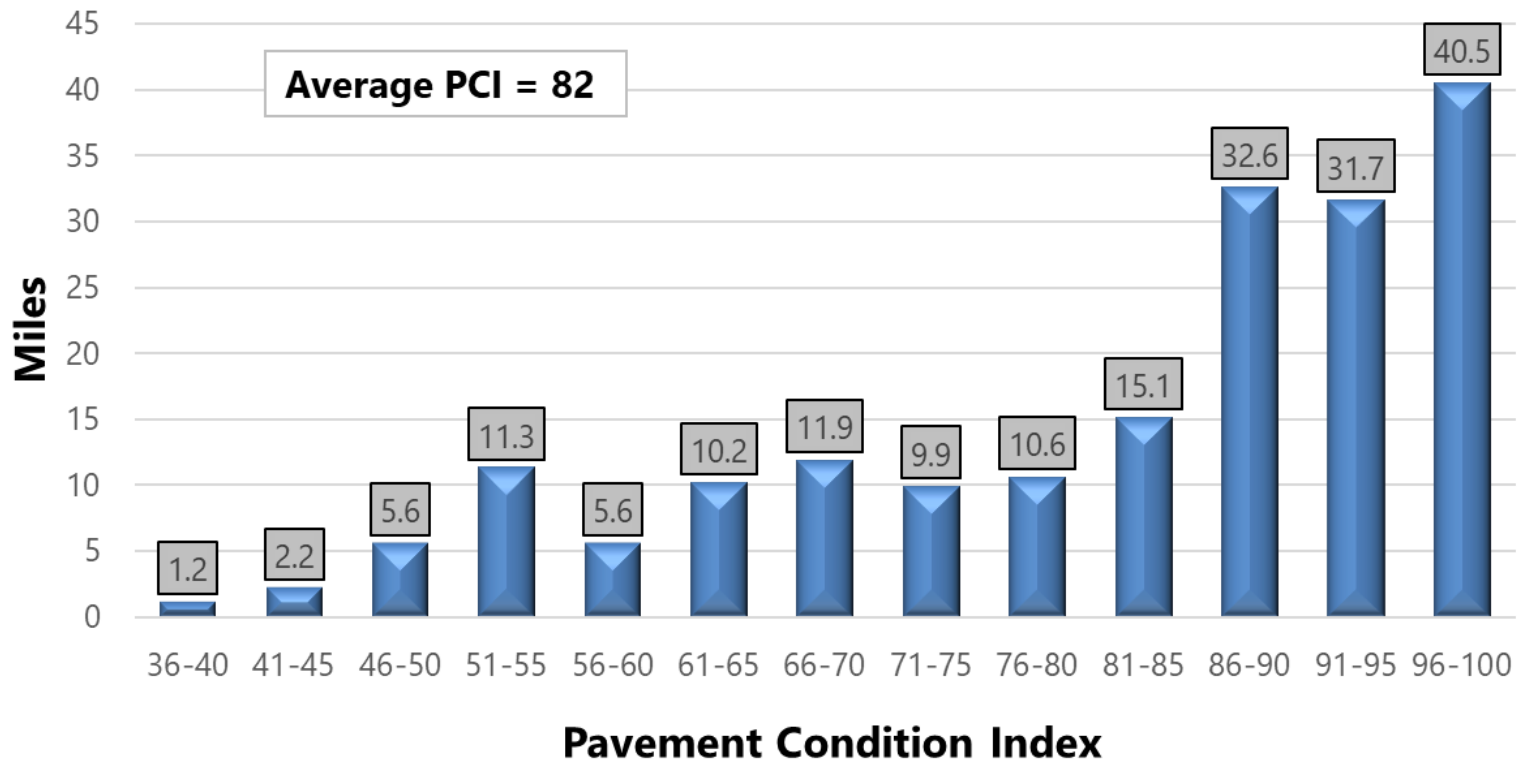


Crack Seal Work Completed (2016)



ROADS Program Including 2020-2023 Recommended Work

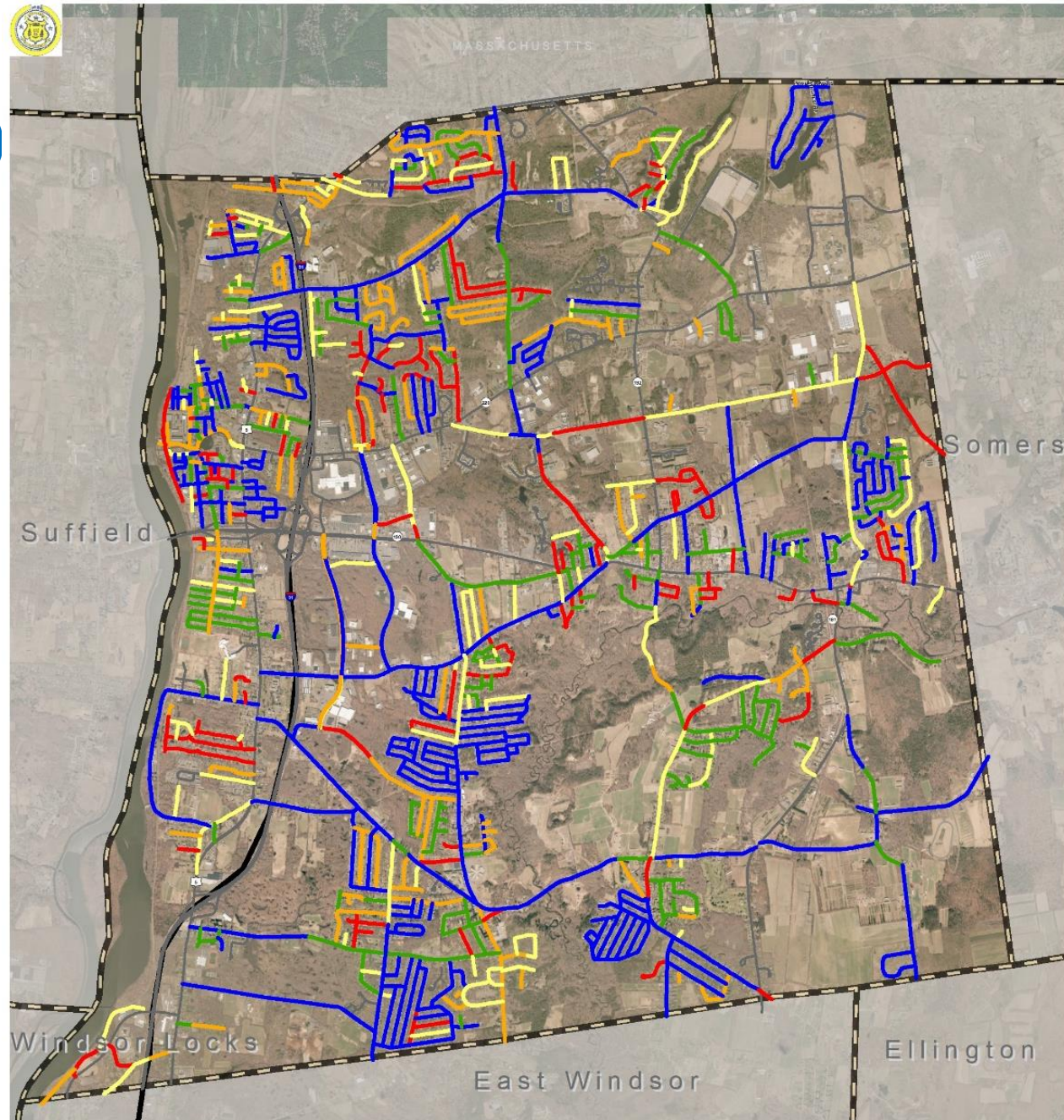
Current PCI Distribution (2018)



Current Conditions (2018)

PCI Legend

- 0-60
- 61-72
- 73-85
- 86-92
- 93-100

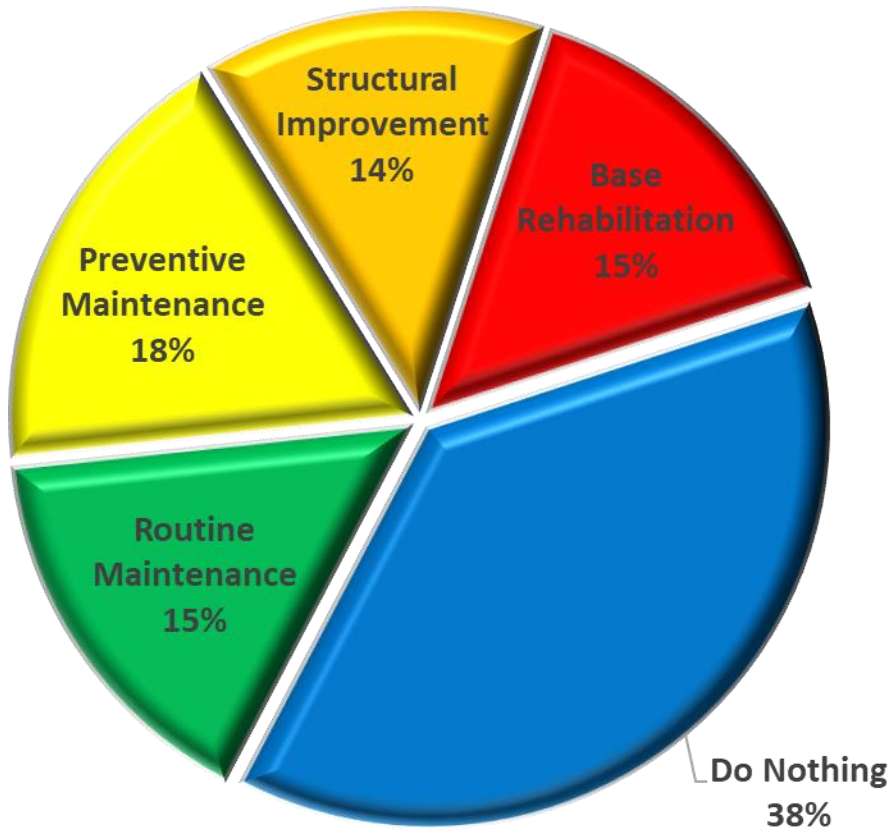


Pavement Backlog Summary

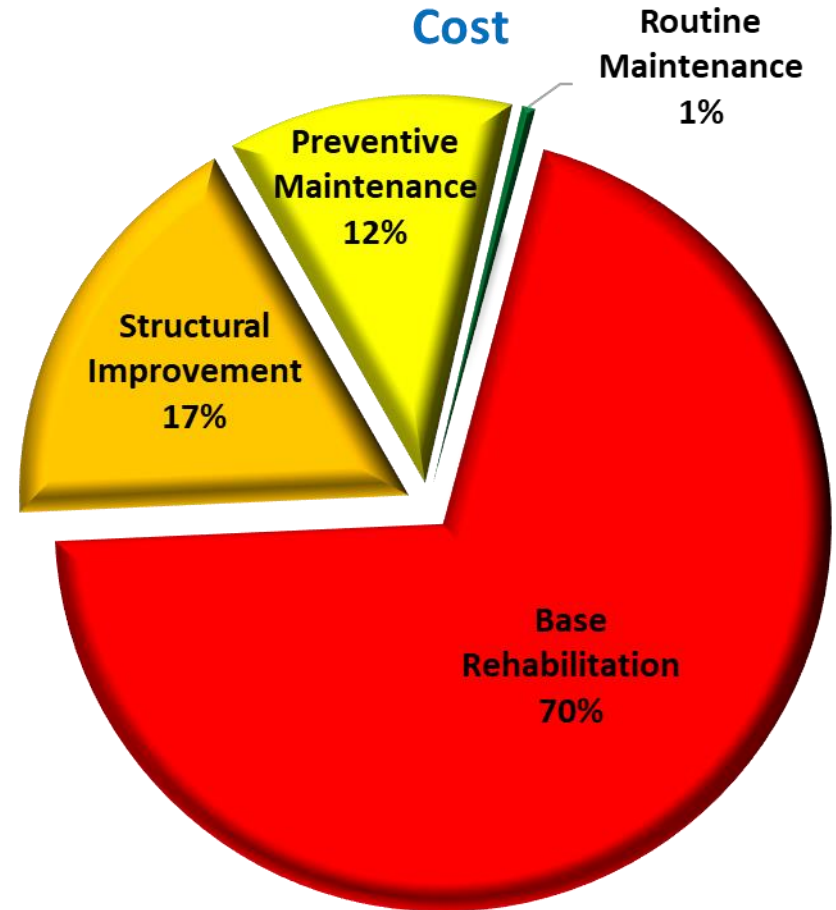
Treatment Band	Cost	Miles
Do Nothing	-	68.6
Routine Maintenance	\$356,000	28.5
Preventive Maintenance	\$7,703,000	32.6
Structural Improvement	\$11,259,000	25.0
Base Rehabilitation	\$45,346,000	27.3
Grand Total	\$ 64,664,000	182.0

Pavement Backlog Summary

Miles



Cost



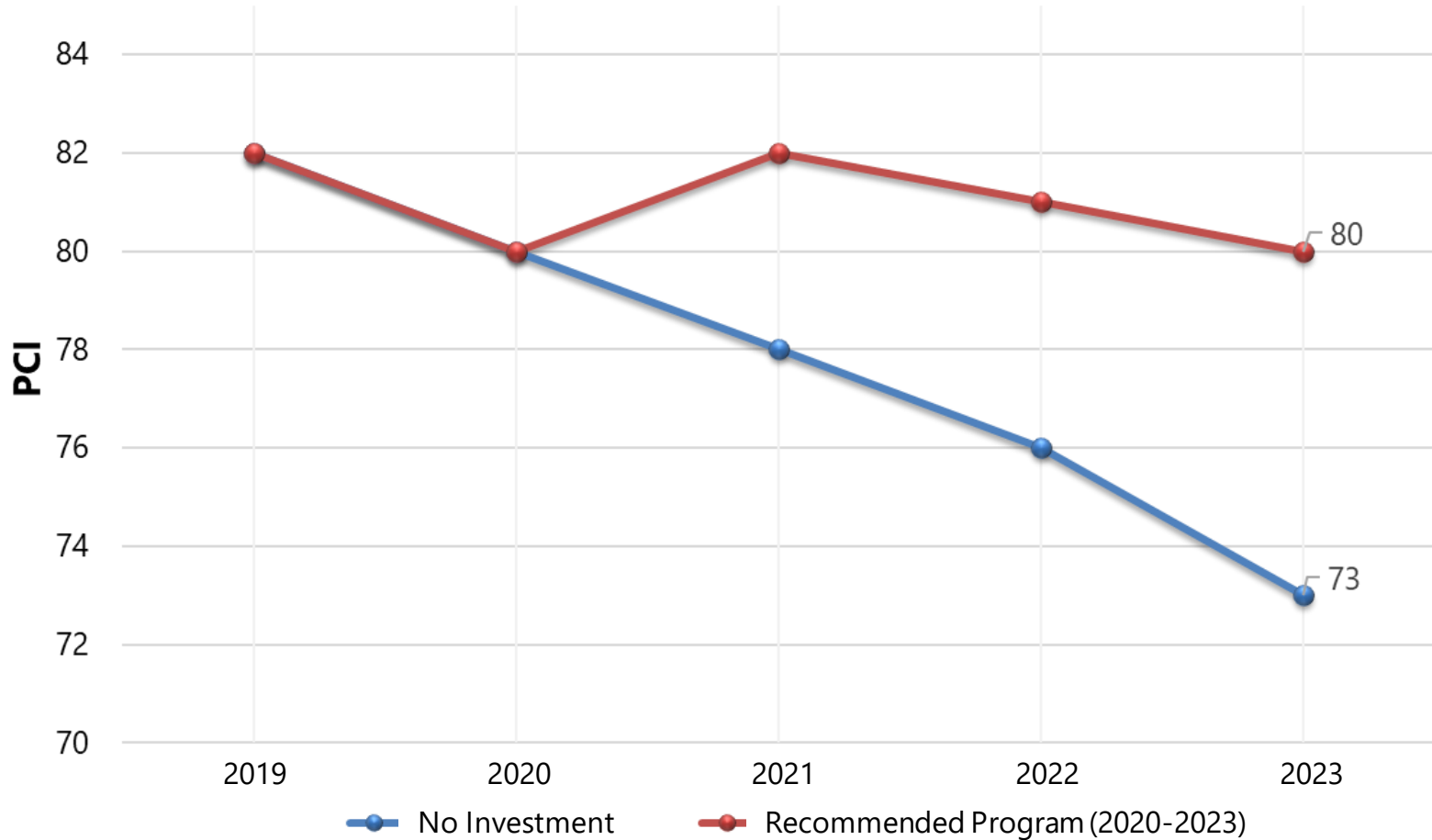
Pavement Funding Scenario Analysis

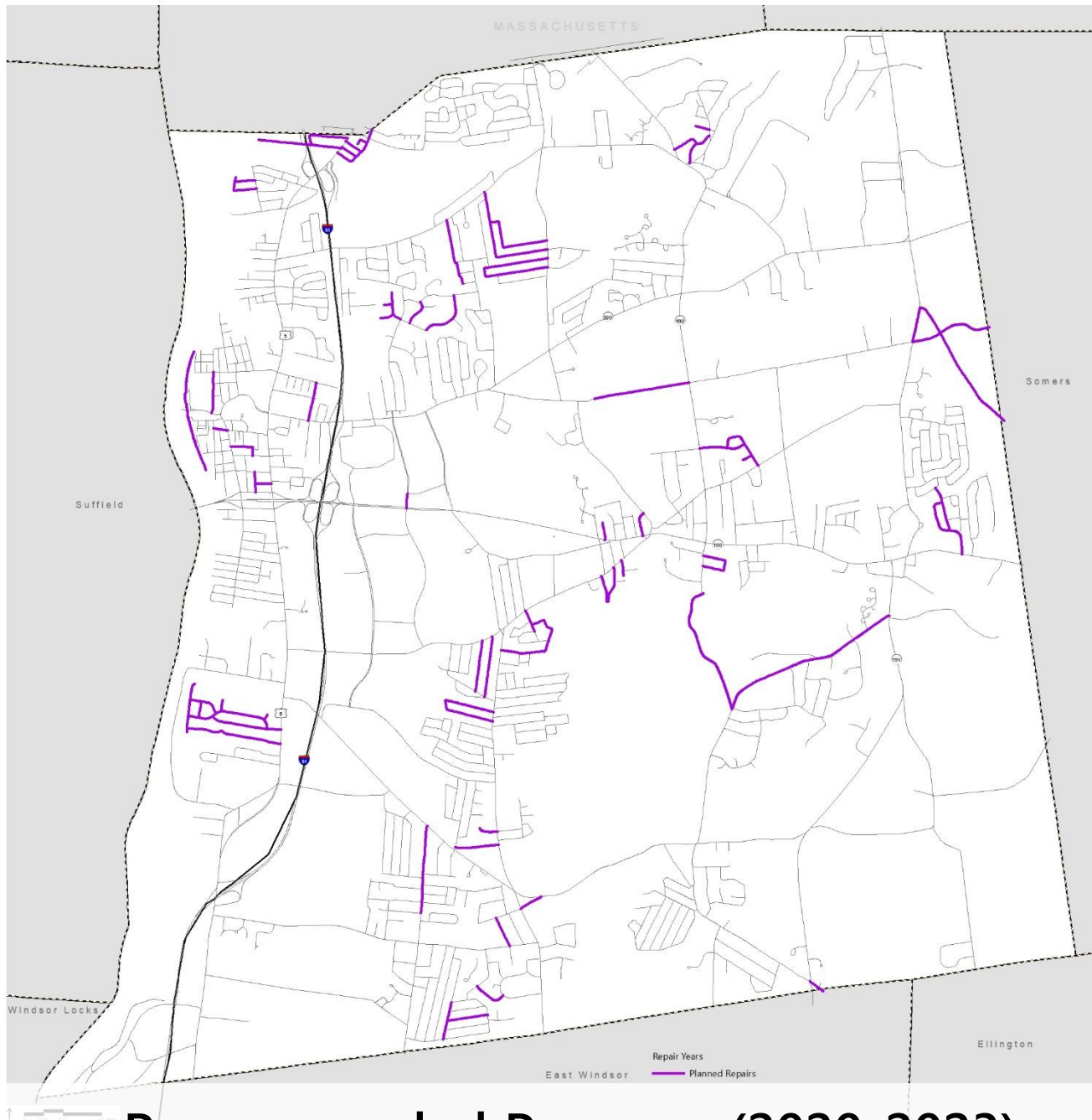
Predicted effects of two potential funding scenarios:

- \$26,000,000 over 5 years (Potential Bond Funding)
- No investment

Pavement Funding Scenario Analysis

Projected Future Average PCI





Recommended Program (2020-2023)

Recommended Program (2020-2023)

Road Name	Project Limit
ABBE RD	BROAD BROOK RD (N) TO POWDER HILL RD
ABBE RD	BROAD BROOK RD (S) TO TOWN LINE (KYRSIEG ROAD)
ALOHA DR	ENTIRE ROAD
ARBOR RD	ENTIRE ROAD
BELL ACRE RD	ENTIRE ROAD
BETTY RD	ENTIRE ROAD
BRIARWOOD DR	ENTIRE ROAD
BROAD LEAF LN	ENTIRE ROAD
CARL ST	ENTIRE ROAD
CARLISLE ST	ENTIRE ROAD
CHERYL DR	ENTIRE ROAD
CONLIN DR	ENTIRE ROAD
CONNECTICUT AV	ENTIRE ROAD
DICARDEE DR	ENTIRE ROAD
EDMUND LN	ENTIRE ROAD
FALCON CREST	ENTIRE ROAD
FARMSTEAD CIR	ENTIRE ROAD
FRESHWATER BLVD	HAZARD AV TO CRANBROOK RD
GARFIELD ST	WALNUT ST TO NEW KING ST
GARY RD	ENTIRE ROAD
GRANT STREET	ENTIRE ROAD
HAYNES ST	ENTIRE ROAD
HIGH ST	PROSPECT AV TO PEARL ST
HIGHMEADOW LN	ENTIRE ROAD

Recommended Program (2020-2023)

Road Name	Project Limit
HILLYER DR	ENTIRE ROAD
HOLLY LN	ENTIRE ROAD
HOMESTEAD DR	ENTIRE ROAD
INDIAN RUN	ENTIRE ROAD
JONDOT DR	ENTIRE ROAD
KNOX ST	ENTIRE ROAD
MARTIN TERR	ENTIRE ROAD
MEADOW LARK RD	ENTIRE ROAD
MOODY RD	583' E OF ELM ST TO NORTH MAPLE ST
MOODY RD	TAYLOR ROAD TO SOMERS TOWN LINE
NORTH RIVER ST	ENTIRE ROAD
PEARL ST EXT	ENTIRE ROAD
PLEASANT ST	MAIN ST TO WHITWORTH ST
POWDER HILL RD	ENTIRE ROAD
POWDER RIDGE RD	ENTIRE ROAD
PRIOR RD	ENTIRE ROAD
PUTNAM DR	ENTIRE ROAD
QUAKER LN	BASS DR TO COLONIAL DR
RIDGE RD	DOUGLAS DR TO CUL DE SAC
RIDGEVIEW LA	ENTIRE ROAD
ROSANNE ST	ENTIRE ROAD
ROY ST	ENTIRE ROAD
RYEFIELD DR	ENTIRE ROAD
SHAKER HILL RD	ENTIRE ROAD

Recommended Program (2020-2023)

Road Name	Project Limit
SIDOR DR	ENTIRE ROAD
SOMERS RD	ENTIRE ROAD
SOUTH RIVER ST	ENTIRE ROAD
STEELE RD	POST OFFICE RD TO ROCKLAND RD
STEPHEN DR	ENTIRE ROAD
STORRS RD	ENTIRE ROAD
SUMMER ST	ENTIRE ROAD
SWORD AV	ENTIRE ROAD
TAYLOR RD	MOODY RD TO SOMERS RD
THEODORE ST	ENTIRE ROAD
TIE ST	INDIAN RUN TO ARROW ST
TRINITY DR	ENTIRE ROAD
VALLEY VIEW CR	ENTIRE ROAD
VARNO LN	ENTIRE ROAD
WALNUT ST	ENTIRE ROAD
WASHINGTON AV	ENTIRE ROAD
WEBSTER RD	ENTIRE ROAD
WEYMOUTH SCHOOL RD	SIMON RD TO POST OFFICE RD
WILLARD AV	ENTIRE ROAD
WILSTARR CIR	ENTIRE ROAD
WINDING LN	ENTIRE ROAD
YALE CT	ENTIRE ROAD
YALE DR	ENTIRE ROAD

Concluding Remarks

- Success of the ROADS program is made possible by Voters, Town Council and the Department of Public Works.
- The Town's commitment to its road network
 - Tremendous investment over 20 years
 - Unmatched by any other community of similar size
- ***Initial pavement condition goals have been reached!***
- Future success of the ROADS program
 - Many remaining roads in need of rehabilitation
 - Protect the investment that has been made

September 3, 2019 | **Town of Enfield**



Questions & Answers

